

# PS10

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## 1 Optimal Parameters

logit model:  $s=0.01$ ,  $\lambda=0.211$ ,  $\alpha=0.874$   
nueral net: size=10, decay=0.157, maxit=1000  
k-nearest neighbor:  $k=24$

## 2 Mean Error

logit model: 0.2404422  
naive bayes: 0.009672962  
nueral net: 0.0428374  
k-nearest neighbor: 0.02072778

## 3 Conclusions

Out of the models I completed, the naive bayes had the least amount of error. Knn and nueral net also performed really well, but the logit model didn't do so hot (relatively).

## 4 Limitations

The support vector machine took too long. I ran it for about thirty minutes before giving up and continuing with the rest of the problem set. Also, for some reason the tree model kept having problems with the minsplint tuning, and I couldn't figure out why. Thus, I do not have the performance of either of those models in my answers. Also, sorry I turned in the problem set a day late. It took longer than I initially anticipated.